

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
9 October 2003 (09.10.2003)

PCT

(10) International Publication Number
WO 03/083874 A1

(51) International Patent Classification⁷: **G11C 19/08**,
13/02

(21) International Application Number: PCT/GB03/01266

(22) International Filing Date: 25 March 2003 (25.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0028092.5 27 March 2002 (27.03.2002) GB

(71) Applicant (for all designated States except US): **EAST-GATE INVESTMENTS LIMITED** [—/—]; Cedar House, 41 Cedar Avenue, P.O. Box HM 1179, Hamilton HM-EX (BM).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **COWBURN, Russell**,

Paul [GB/GB]; University of Durham, Department of Physics, Rochester Building Science Laboratories, South Road, Durham DH1 3LE (GB).

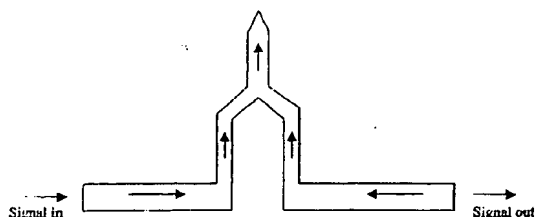
(74) Agent: **NOVAGRAFF PATENTS LIMITED**; The Crescent, 54 Blossom Street, York YO24 1AP (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PI, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

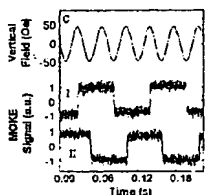
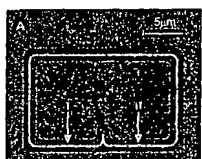
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

[Continued on next page]

(54) Title: DATA STORAGE DEVICE



(57) Abstract: A data storage device for storing digital information in a readable form is described made up of one or more memory elements, each memory element comprising a planar magnetic conduit capable of sustaining and propagating a magnetic domain wall formed into a continuous propagation track. Each continuous track is provided with at least one and preferably a large number of inversion nodes whereat the magnetisation direction of a domain wall propagating along the conduit under action of a suitable applied field, such as a rotating magnetic field, is changed.



WO 03/083874 A1